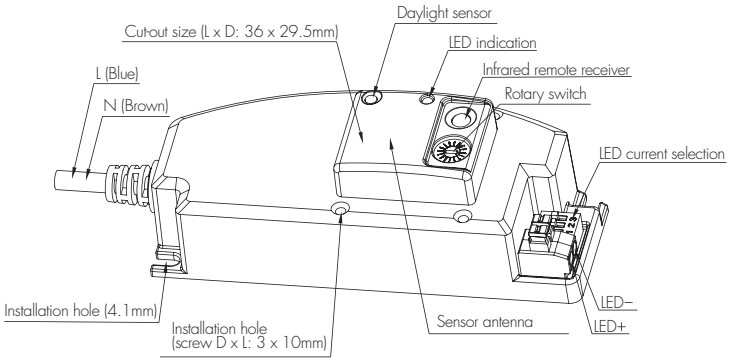
Integrated SensorDIM™ LED Driver Daylight Monitoring Version

Model: HEC7028 with HRC-05



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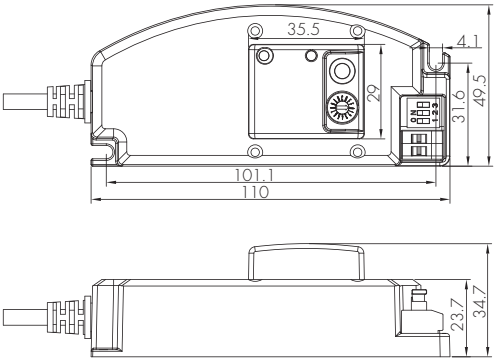
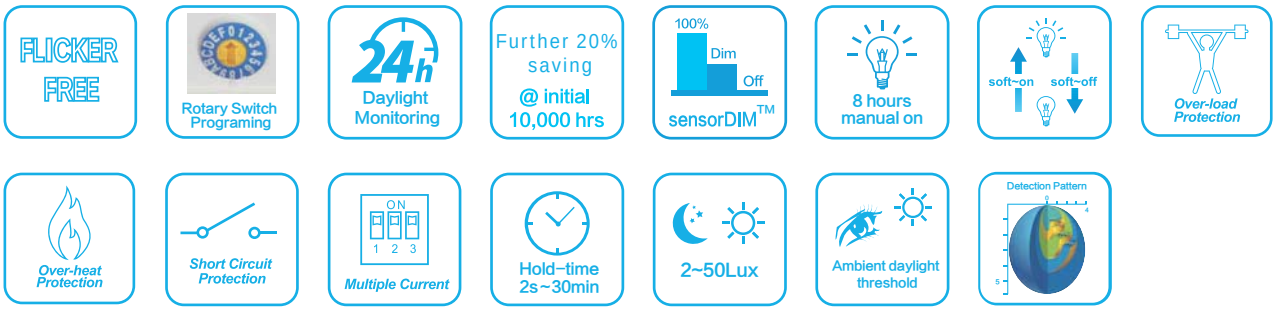


Mechanical structure (mm)



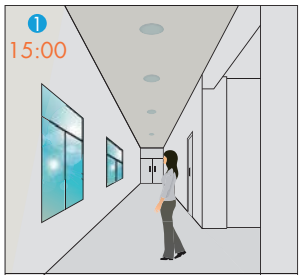
2 in 1 and cost effective! This is a smart integration of microwave motion sensor and multiple current selection LED driver, which gives pre-selected constant current to drive the LEDs to work based upon movement detection. Designed in the software and thanks to our worldwide patented circuit, the built-in daylight sensor is prior to motion sensor so as to achieve utmost energy saving purpose.

Functions and Options

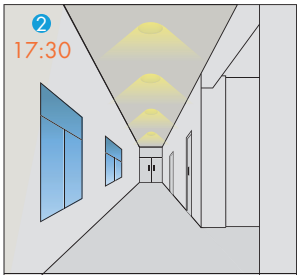
1 Daylight Monitoring Function

Hytronik specially designed this function in software for deep energy-saving purpose:

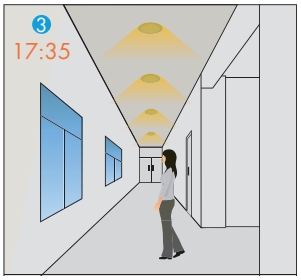
1. With sufficient natural light, the light won't turn on when motion detected.
2. After hold-time, the light turns off completely if surrounding natural light is sufficient.
3. When stand-by period is preset at "+∞", the light will turn off completely when surrounding natural light is sufficient during stand-by period, and turn on at dimming level automatically when natural light is below daylight threshold.



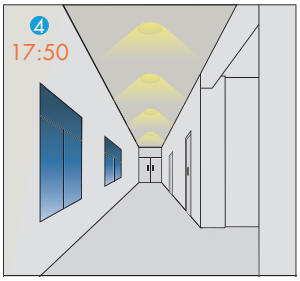
With sufficient natural light, the light does not switch on even there is movement detected.



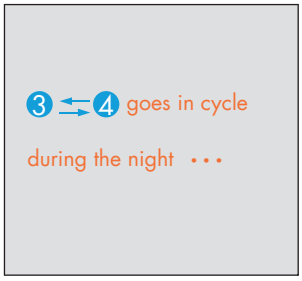
At dusk,as the natural light drops below threshold value, the sensor turns on the light at the dimmed level.



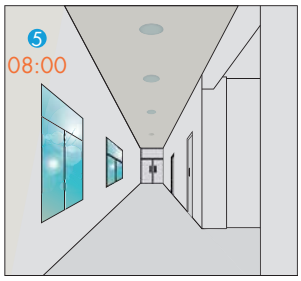
The light switches on at 100% when there is movement detected.



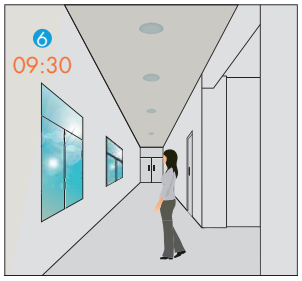
Light dims to stand-by level after the hold-time.



100% on when movement detected, and dims to10% in long absence.



At dawn, light turns off completely when natural light reaches above daylight threshold.



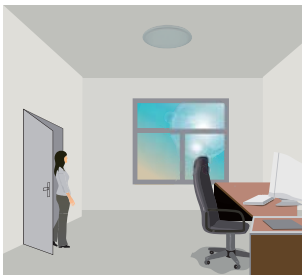
Light does not switch on even when movement detected during the daytime.

Settings on this demonstration:

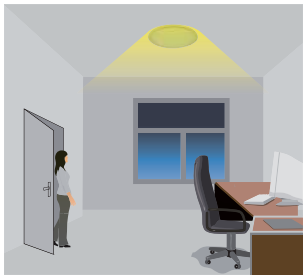
Hold-time	10min
Daylight threshold	50lux
Stand-by period	+∞
Stand-by dimming level	10%

2 Tri-level Dimming Control (Corridor Function)

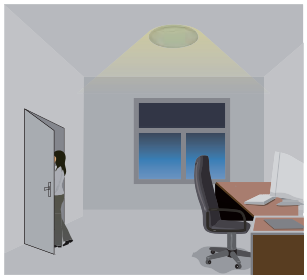
Same as Tridonic excel control gear, Hytronik builds this function inside HEC7028 to achieve tri-level dimming control, for some areas that require a light change notice before switch-off. It offers 3 levels of light: 100% –> dimmed light –> off.



With sufficient natural light, the light does not switch on when movement detected.



With insufficient natural light, it switches on the light when person enters the room.



After hold-time, the light dims to stand-by level or turns off completely if surrounding natural light is above the daylight threshold.

The light switches off automatically after the stand-by period elapsed.

3 Ambient Daylight Threshold

Switch the power supply to the sensor two times within 2 seconds, the sensor can set the ambient lux level as the new threshold. This feature enables the daylight sensor to be commissioned to the environment in which it is installed. The latest action controls. (More details of the operation procedure please refer to user manual).

4 8H Manual on Mode For LED Lamp

Rapidly turn off/on the power supply three times within 3 seconds, the light will be 100% on for 8 hours, and then goes to sensor mode automatically after 8 hours. Useful when sensor function is not needed in special occasion.
Note: this 8H manual on mode can be cancelled by turning off/on the power supply one time within 1second.

5 LED Current Selections

	1	2	3	Current
I	●	●	●	900mA
II	○	●	●	750mA
III	●	●	○	700mA
IV	○	●	○	550mA
V	●	○	○	500mA
VI	○	○	○	350mA

The current can be easily configured by choosing the correct combination of the DIP switches (see table on the left).

6 LED Maximum Load and Voltage

This multiple current LED driver has a wide range of loading capacity:

Maximum load @ different currents:	3.5~17W (350mA)	5~24W (500mA)	5.5~25W (550mA)
	7~28W (700mA)	7~28W (750mA)	9~28W (900mA)
Maximum voltage @ different currents:	10~48V (350mA)	10~48V (500mA)	10~46V (550mA)
	10~40V (700mA)	10~37V (750mA)	10~31V (900mA)

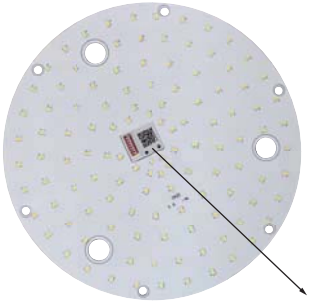
Settings (Rotary Switch on Sensor Antenna)

Instead of the DIP swiches, end user can easily choose the settings by the rotary switch. There are total 16 channels / combinations which could meet different requirements in real application:

Channel	Detection range	Hold-time	Daylight sensor	Stand-by period	Stand-by dimming level
0	100%	5s	Disable	10s	10%
1	100%	30s	2Lux	1min	10%
2	100%	1min	2Lux	5min	10%
3	100%	1min	10Lux	10min	10%
4	100%	1min	Disable	+∞	10%
5	100%	5min	2Lux	10min	10%
6	100%	5min	10Lux	30min	10%
7	100%	5min	Disable	+∞	10%
8	100%	10min	2Lux	10min	10%
9	100%	10min	10Lux	30min	10%
A	100%	10min	Disable	+∞	10%
B	50%	10min	Disable	30min	10%
C	10%	10min	Disable	10min	10%
D	100%	30min	10Lux	30min	10%
E	100%	30min	Disable	+∞	10%
F	100%	5s	2Lux	10s	10%

Note: end-user can also scan the QR code on the housing for channel settings.

Assembly



The protrusion of the sensor antenna can stick out of the LED panel, which enables end user to change the sensor setting directly without opening up the fixture.

The cut-out is only 36 x 29.5 mm, which eliminates the potential risk of shadow.

this QR codes links installer to the user manual on HYTRONIK web, to check the details of setting (program).

Cut-out size: 36 x 29.5 (mm)

Settings (Remote Control HRC-05)

Permanent ON/OFF function

Press the "ON/OFF" button, the light goes to permanent on or permanent off mode, sensor is disabled.

* Press "Auto Mode", "RESET" or "Scene mode" buttons to quit from this mode.

Sensor mode

Press "Auto Mode" button, the sensor starts to work and all settings remain the same as the latest status before the light was switched on/off.

Reset function

Press "RESET" button, all settings go back to the value of rotary switch.

Dim +/-

Long press "Dim +" or "Dim –" to adjust the light brightness during hold-time. " + " means dimming up, " – " means dimming down.

Test mode

The button "Test 2s" is for testing purpose only. The sensor goes to test mode (hold-time is 2s) automatically after commissoning, meanwhile the stand-by period and daylight sensor are disabled.

* This mode can be ended by pressing "reset", or any button of "scene mode" and "hold time". The sensor setting is changed accordingly.

HRC-05

Note: The buzzer beeps one time when RC receives signal successfully.

Power output

By pressing these two buttons, the output shifts between 80% (at initial 10,000 hours) and 100%, for energy saving purpose.

Lux disable

Press this button, the built-in daylight sensor stops working, and all motion detected could turn on the lighting fixture, no matter how bright the natural light is.

Ambient daylight threshold

Press this button, the latest surrounding lux value overwrites previous lux value learned, and is set as the daylight threshold. This feature enables the fixture to function well in any real application circumstance.

Scene mode

There are 4 scene modes fixed program built-in the remote control to choose for different applications:

Scene options	Detection range	Hold-time	Stand-by period	Stand-by dimming level	Daylight sensor
SC1	100%	1min	10min	10%	2Lux
SC2	100%	5min	10min	10%	2Lux
SC3	100%	10min	30min	10%	10Lux
SC4	100%	10min	+∞	10%	50Lux

Note: end-user can adjust the settings by pressing buttons of detection range/hold-time/stand-by period/stand-by dimming level/daylight sensor. The lastest setting stays in validity.

Detection range

Press the buttons of "detection range" to set detection range at 10% /50% /100%.

Hold-time

Press the buttons of "hold-time" to set hold-time at 30s / 1min / 5min / 10min / 30min.

Daylight sensor

Press the buttons of "daylight sensor" to set daylight threshold at 2Lux / 10Lux / 50Lux.

Stand-by period (Corridor Function)

Press the buttons of "stand-by period" to set stand-by period at 0s / 10s / 1min / 10min / 30min / +∞.

Note: "0s" means on/off control; "+∞" means bi-level dimming control, light never switches off when daylight sensor is disabled.

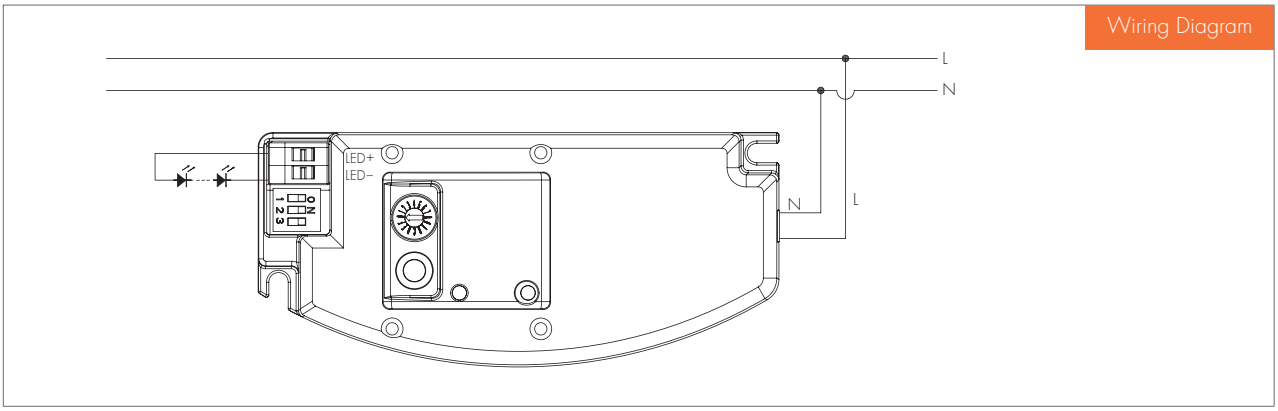
Stand-by dimming level

Press the buttons of "stand-by dimming level" to set the stand-by dimming level at 10% / 20% / 30%.

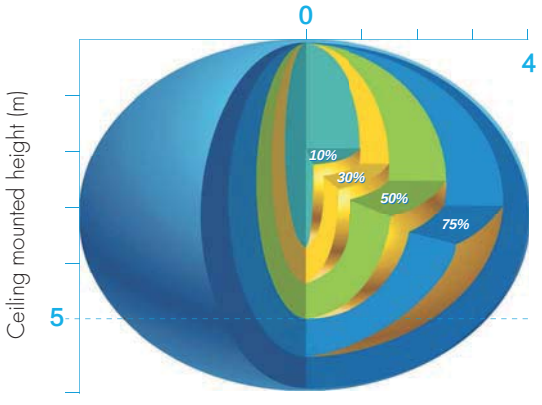
M/A Manual Override / Absence Detection

Button "M/A" is disabled.

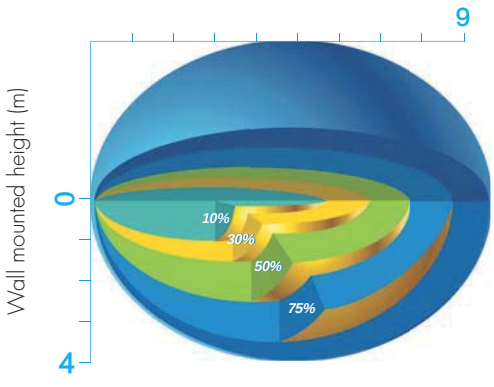
Wiring Diagram



Detection Pattern



Ceiling mounted detection pattern (m)



Wall mounted detection pattern (m)

Technical Data

Operating voltage	220-240VAC 50/60Hz
Input current	0.15-0.14 A
Input power	32.5W (Max.)
Warm time	20s
Detection area	100% /50% /10% on RC
Hold-time	TEST 2s /30s /1min /5min /10min /30min on RC
Daylight threshold	2Lux /10Lux /50Lux /Lux disable on RC
Stand-by period	0s /10s / 1min / 10min/ 30min /+∞ on RC
Stand-by dimming level	10%/ 20%/ 30% on RC
Microwave frequency	5.8GHz+/-75MHz
Microwave power	<0.2mW
Detection range	Max. (ØxH): 8m x 5m
Detection angle	30°~150°
Mounting height	Max.5m
Output LED current	350mA/500mA/550mA/700mA/750mA/900mA
Output LED voltage	10~48V (350mA) 10~48V (500mA) 10~46V (550mA) 10~40V (700mA) 10~37V (750mA) 10~31V (900mA)
Output LED power	3.5~17W (350mA) 5~24W (500mA) 5.5~25W (550mA) 7~28W (700mA) 7~28W (750mA) 9~28W (900mA)
Empty load voltage	60V
Power factor	≥0.9
Efficiency	85% (Max.)
Operating temperature	-20°C ~ +50°C TC:75°C
Abnormal protection	Output short-circuit protection with auto-reset
EMC standard	EN55015, EN61547
Safety standard	EN61347-1, EN61347-2-13
Certification	Semko, CB, EMC, CE, R&TTE, SAA
Dielectric strength	Input→output:3750VAC /5mA/1min
IP rating	IP20